

**Notice of Allowability**

Application No.

09/622,568

Examiner

Rebecca E. Prouty

Applicant(s)

DANKS ET AL.

Art Unit

1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE of 2/8.05.
2. ☒ The allowed claim(s) is/are 23,25 and 27-29.
3. ☒ The drawings filed on 18 August 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

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A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/8/05 has been entered.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

#### EXAMINER'S AMENDMENT

Insert on page 1 immediately following the title, --This application claims the benefit of US provisional application 60/075,258, filed February 19, 1998.--.

Insert the abstract on the attached separate sheet.

The following is an examiner's statement of reasons for allowance:

All claims are limited to the use of the rabbit liver carboxylesterase encoded by SEQ ID NO:21. While it would have

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been obvious to one of skill in the art to administer a rabbit liver carboxylesterase, including the rabbit liver carboxylesterase sold by Sigma, as discussed in the previous Office Actions, it is not clear that the rabbit liver carboxylesterase sold by Sigma is identical to the rabbit liver carboxylesterase encoded by SEQ ID NO:21. The prior art teaches several rabbit liver carboxylesterase isozymes, at least some of which have very similar but not identical sequences to that encoded by SEQ ID NO:21. Furthermore, multiple highly similar isozymes of the liver carboxylesterases of other mammals are known in the art (see Table 2 of Satoh et al., Ref. AS of applicants IDS of 8/7/02). While it is clear that the recombinant rabbit liver enzyme used by Danks et al. (Reference AB of applicants IDS) is identical to that encoded by SEQ ID NO:21 and that this enzyme had been obtained by making probes based on peptide sequences from the rabbit liver carboxylesterase sold by Sigma, such probes would likely hybridize to any gene encoding a rabbit liver isozyme which is highly similar to that of the Sigma enzyme. As the art establishes that such sequences are likely to occur, a skilled artisan cannot reasonably conclude that the recombinant enzyme of Danks et al. is identical to any art taught preparation of a rabbit liver carboxylesterase enzyme, including that taught by

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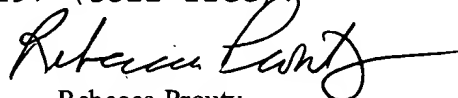
Sigma. Furthermore, the enzyme use by Danks et al., was not enabled at the time of the instant invention as the Danks et al. reference teaches neither the sequence of the enzyme nor its method of making.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca E. Prouty whose telephone number is 571-272-0937. The examiner can normally be reached on Tuesday-Friday from 8 AM to 5 PM. The examiner can also be reached on alternate Mondays

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy, can be reached at (571) 272-0928. The fax phone number for this Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rebecca Prouty  
Primary Examiner  
Art Unit 1652

ABSTRACT

Polynucleotides encoding a carboxylesterase enzyme and polypeptides encoded by the polynucleotides which are capable of metabolizing a chemotherapeutic prodrug and inactive metabolites thereof to active drug are provided. Compositions and methods for sensitizing tumor cells to a prodrug chemotherapeutic agent and inhibiting tumor growth with this enzyme are also provided. In addition, screening assay for identification of drugs activated by this enzyme are described.